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THE MOTOR AGE

THE AUTOMOBILE AUTHORITY OF AMERICA



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ALBERT OTTO
Treasurer and Ruling Spirit of the Automobile Co., of America,
Maker of Gasmobiles



NEW YORK, Feb. 23.—There is great rejoicing among the members of the Automobile Club of America at the gasoline ferry bill having finally passed the senate and the house and become a law by the president's signature.

Messrs. Church and Chamberlin of the law committee, have been the recipients of numerous and hearty congratulations on the victorious outcome of their crusade. The prestige of the club has also been greatly enhanced by the victory, which bids fair to aid the club greatly in its future efforts toward just automobile legislation. The club has formally notified the ferry companies of the enactment of the new law.

Under the new law captains of ferry boats can, in their discretion, carry automobiles which use gasoline or other products of petroleum in the generation of power. The only restriction imposed by the law is that before it is taken on board a ferry boat all lights or fire in such an automobile must be extinguished.

KILOMETER A MINUTE

The first of a series of motor-vehicle contests at Pau, southern France, was a 140-kilometer road race run February 15. It demonstrated the ability of the light high-powered vehicle to successfully compete with the heavy machines which have been in the past supposed

to be the most suitable type for speed work. The fastest time over the course was made by Henri Farman in a Darracq 12-horsepower machine, who completed the trip in 2:20:30, a speed of a kilometer a minute.

LECTURES TO CHAUFFEURS

New York, Feb. 23.—Following last season's precedent, the Automobile Club of America will inaugurate on Tuesday evening another series of practical lectures. The first course provided for has to do with the care and handling of automobiles. J. A. Kingman, of the Locomobile Co. of America, will start the ball rolling from the steam standpoint. C. J. Field, of the De Dion-Bouton Motorette Co., will take up gasoline vehicles, and A. L. Riker, of the Electric Vehicle Co., will discuss electric carriages.

MANUFACTURERS AID CLUB MEN

New York, Feb. 23.—The Automobile Manufacturers' Association executive committee had a special meeting on Wednesday to take action on the bills now pending at Albany to give county supervisors the power to pass speed ordinances, to which motor vehicle makers and users object on the ground of lack of necessary uniformity obtainable only by a general state law on the subject. President Davis was in the chair with Messrs. Riker, Hill, Owen, Frayer and Field also in attendance.

The president was empowered to employ counsel and to appoint a sub-com-

mittee of the executive committee to attend the hearing to be given next Wednesday.

The Automobile Club of America will also be represented at the hearing and present a substitute bill prepared by its law committee along the lines of the interview of the Motor Age man with Mr. Chamberlin last week.

A LESSON FOR COMMISSIONERS

During the recent conference between the committee of the Washington Club and the commissioners of the District of Columbia, the former told the commissioners some things about the effect of automobiles on the public highways, and made comparisons with other forms of vehicles, which ought to be made known to the authorities of every city in the land. Said Chairman Lockwood:

"We desire to say that you have a great many miles of asphalt pavement built and constructed at enormous expense, over which these vehicles travel, guided and controlled by careful operators, practically noiseless in movement, which is a great comfort to every person, and yet to the individual who is not acquainted with their effect upon roads and the roads required by them, it may seem that they are enjoying a disproportionate amount of comfort and profit out of this asphalt construction, and therefore ought to be and are a proper subject for further restriction and taxation.

"But this question, when presented to the practical operator or close observer, renders this sort of argument not only nugatory, but absolutely ridiculous and foolish. The smooth gravel road is decidedly the best for an auto-vehicle, and not only is that the best road for them, but when propelled over asphalt streets they are absolutely no wear upon them.

"There are to-day perhaps 150 automobiles within your city, and if the entire traffic of this city was done by rubber-tired automobiles, not one mile of asphalt pavement would be required except for purely sanitary reasons. And even if the concrete pavement as now maintained were to be continued for

sanitary reasons, this pavement would last indefinitely, and always remain in perfect condition if none other than rubber tires were traversing it.

"Aside from this, the use of these 150 auto-vehicles removes from your streets the filth incident to the use thereon of about 300 horses, a great assistance in the way of health and a saving in expense in the street cleaning charge.

"The horseless vehicle is a godsend to the healthfulness and cleanliness of the city, and in avoiding the noise and jar incident to the movement of horse-drawn vehicles and to the heretofore enormous expenditure for city pavements. Could you do away with the horses' hoofs, their sharp shoes, and your steel tires, the pavement would last indefinitely, when constructed with care.

"It is a well-known fact that the use of rubber-tired vehicles actually improves macadam, gravel or clay roads by smoothing them down, creating no dust because of no tendency to cut, while the probable injury to the tire is augmented by glass, nails, and the like, being encountered on smooth, hard asphalt pavements."

The chief of police, of Indianapolis, has instructed officers to arrest drivers of automobiles who travel at too great speed —provided they can catch them.

The district commissioners, of Washington, have asked the secretary of state to assist them in obtaining information relative to the regulation of speed in foreign countries where automobiles are in common use. They will also ask for information from the authorities of other American cities.

A manufacturer of gasoline vehicles has made application to the commissioners of Druid Hill Park, Baltimore, for a permit to operate in the park, renting vehicles for a small fee to pleasure parties. They will test the vehicles before replying. The commissioners, who have so far refused to allow automobiles to enter the park, are now considering a modification of the order. If all park commissioners would adopt similar common sense measures they would save a lot of time and

expense over legal wrangles in which they are sure to be beaten in the end.

Supervisor Booth, of San Francisco, has taken up the question of licences for drivers of automobiles and will also try to have the city council pass an ordinance regulating the speed at which they may be propelled.

Racing vehicles of 35-horsepower have aroused the ire of M. Charron of international road race fame, and he is now busy backing his 20-horsepower machine with good sized financial dares to all owners of high horsepower marvels.

M. Charron says he is ready to meet Mr. Winton or anybody else in a race if the stakes are big enough, but that he insists that races shall be with road carriages and not with special racing machines built purely and simply for speed.

Yellow journalism was responsible, a few days ago, for a sensational story about a \$5,000 challenge from the Automobile Club of America for a contest between New York and Buffalo. The fact seems to be that the reporter had just discovered what everyone else has known for weeks, that the club is arranging a big run to take place this summer. That is all there is to this latest sensation, but the story is being given publicity and will still further antagonize

the rural classes which already entertain unfriendly feelings toward reckless operators of automobiles.

"Bob" McCurdy, who is connected with the newly established Philadelphia branch of the Motor Vehicle Co. of America at 1319 Arch street, will represent Philadelphia in the New York-Buffalo contest next fall. Bob now holds the Philadelphia-Atlantic City record, and is prepared to hold the honor against all comers.

The young Earl of Clonmel, whose handsome castle is in County Kildare, Ireland, and known as Bishop's Court, and who was an enthusiastic bicyclist a few years ago, is a great student of automobilism and his spare moments are devoted to automobiles and race-horses, of which he owns many. The earl is now in New York sampling our fine drives and other specialties.

No one appeared at Albany to address the committee on internal affairs relative to the bill recently introduced by Assemblyman Smith, to give to boards of supervisors the right to prescribe the limit of speed at which automobiles shall be driven in their several districts. The committee, therefore, determined to report favorably on the bill. If it is passed confusion will result, for the driver, to be well posted on the requirements of all the districts will have to carry along a reference library.



ANOTHER CLUB FOR CHICAGO

AUTOMOBILE club enthusiasm heretofore has been confined to the east. This will not be the case another season. The Chicago Automobile Club has just taken steps which indicate that it will be far more active than heretofore and a new club is forming which will infuse new blood into the sport and pastime.

After an existence of seven or eight months on an informal go-as-you-please plan, the Chicago Automobile Club intends to get down to business and let the people generally and the members particularly know why it is in existence and what it intends to do.

The club has had no house or rooms, its offices have been but partially filled, and aside from a brief and somewhat sad connection with an entertainment given at Washington park last summer, it has done little for the benefit of its members or the sport to which it is devoted.

This is all to be changed. Club rooms have been secured in Steinway Hall, a committee has been appointed to nominate members for the offices and committees left unfilled, and a meeting, to be held on March 2, will weed out the wheat from the chaff—the chaff consisting of those who, while supposed to be members, have not paid their dues up to that time. All who have done so are to be rewarded by being designated charter members and this same privilege is to be accorded to all who, before the first day of the month, are proposed for membership and are acted upon favorably by the nominating committee, which consists of Messrs. Tucker, Donald and Waring.

The annual dues are to be \$30, payable semi-annually in advance. Non-resident members are to be admitted on payment of \$10 a year, but it is required that they reside at least fifty miles from Chicago. It may be found wise at some time in the future to re-

duce the distance a little so that residents of Elgin, Aurora and towns in that part of the state may become supporters of the club.

As soon as all these matters of routine have been attended to it is expected that the club will take an active part in the road improvement and other questions of the day. Properly exercised its influence may be made as valuable to a great pastime as has been that of the Automobile Club of America.

The new club, like all new clubs, will be an active factor, for a time at least. The first steps toward its formation were taken one day last week and on Monday evening in response to a call for a meeting, a dozen gentlemen gathered in the Marquette building and discussed plans for the new organization. T. F. Sheridan, an ex-vice-president of the League of American Wheelmen, and who is deeply interested in road improvement, was elected temporary chairman, and John Campbell acted as secretary of the meeting.

A committee was appointed to draft a constitution and by-laws and another to nominate officers and to secure charter members. The members will meet again as soon as the committee on constitution is ready to report, which it is promised, will be some time during the week.

One of the gentlemen interested in the new enterprise stated to a Motor Age man that he was already assured of enough members to make the club a success and that among them would be a number of gentlemen of prominence in the business world.

"It is not intended," he said, "to confine the membership to any particular class. There are some people who have no other interest in automobiles than the pleasure they can get out of them. There are others who see nothing but the commercial side of the matter at present. Then there are the motor cyclists,

a class of men who will become more prominent possibly than any of the others, at least for the present, because they will be drawn from the masses who cannot afford to indulge in the more expensive vehicles. All these have one common purpose—the preservation of the rights of automobilists and the general improvement of the conditions under which vehicles are used. We shall attempt nothing new when we put our shoulders to the wheel and attempt to secure better streets and better roads, but we shall be able to lend some influence to the furtherance of the work on which so many are engaged. They need all the moral assistance we can lend them and I think we shall have a membership whose influence will have some weight."



Asked whether he did not think it would be a good idea for the members of the new club to go into the old one the speaker replied that he did not, "because," said he, "there can be nothing but the friendliest feeling between us and a little friendly rivalry will do both

of us good. Chicago is too large a city to contain only one club. There are men of different classes, residing in different parts of the city and who naturally prefer to go into a set of people to whom they are known.

"No; I do not think we shall do much to encourage racing matters, at least not for the present. Some of us think that too much attention is given to speed and too little to the utilitarian side of automobiling.

"We shall meet again in the course of a few days and then it will be possible to give Motor Age a more definite idea of the sentiments and intentions of the members."

The gentlemen present were of opinion that nothing would be done immediately about securing club rooms. They believe that they will be able to find a meeting place without difficulty and that it will be well to await developments before plunging too radically.

A number of names for the club were discussed informally, the one which seemed to meet with greatest favor being the Western Automobile Association.

BOSTON PAPERS BLAME MANUFACTURERS

THE announcement of the abandonment of the Boston show has been received with poor grace by the local press which is inclined to say harsh things about the attitude of the manufacturers.

The Herald, one of the oldest and most conservative of the Boston papers, believes that some of them were opposed to the show because of the opportunity it afforded to others, who are not at present represented in the city, to come in and show the people and the dealers what they have to offer. The Herald declares editorially that the interest in automobiles will suffer in the absence of the education which the show would have afforded the people, and then says:

"The reason given for relinquishing

the project is, perhaps, the last that would have been thought of. It is, as announced, because those who were forwarding it have not received the 'co-operation from the manufacturers which they had a right to expect.' A contemporary says that 'the automobile dealers now established in Boston were naturally opposed to the holding of a show which would bring in a large assortment of vehicles at present unfamiliar in this district.' This looks as if the dealers in vehicles that are best known here were not confident of being able to demonstrate the superiority of the wares to others which would be shown. The only effect of such a course must be to make persons who contemplate purchasing an automobile more desirous of knowing

the merits of vehicles manufactured elsewhere before doing so. The interest of the public buyers is to know and obtain the best. Any policy that looks like a purpose to prevent such knowledge means an unfortunate aspect."

The Herald is right and wrong. It is true that the people would have had an opportunity to obtain that education which is so desirable in the early stages of the industry and it is also true that by no means other than a show is that education obtainable. But it is also true that the makers have been at great expense in the matter and have found shows a serious drain on their treasuries.

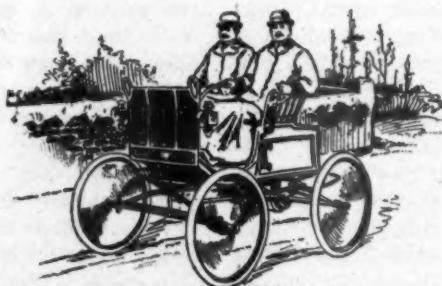
This expense will be well repaid in the long run to those who stay through the early stages and build up a permanent business, for the exhibits, if properly presented, leave an impression on the public mind which has lasting benefits.

The value of shows is unquestionable, provided they are well conducted. The right of makers to abstain from showing, however, cannot be doubted. There are some who take the ground privately that the shows do furnish just the opportunity referred to by the Herald, for the smaller houses to place their goods before the people. A gentleman who is

prominently connected with the manufacturers' association recently made the assertion that he had often thought that the desire of some of the makers to prevent shows was to prevent the introduction of the smaller people.

The late shows at Philadelphia furnished an example of what can be accomplished by shows. The press of that city gave space with almost prodigal liberality to the event. The papers realized that the automobile is the coming vehicle and helped to "push it along." The articles printed in the Philadelphia papers have been copied throughout the length and breadth of the land, thus attracting the attention of millions of people to the fact that the machines are now in marketable shape and building up a demand which will repay the cost of the show a hundred times.

But despite all this the makers have their own pocketbooks and inclinations to consult. They will doubtless decide, if ever the association assumes a national scope, that two national shows, one east and one west, are enough, and that local shows at which dealers will furnish the exhibits will be sufficient in the smaller cities.



News of the Industry

HARTFORD, Conn., Feb. 23.—Judging from what the writer hears in his excursions, the Chicago exhibition has certainly caught the fancy of eastern men and Chicago can rest assured that her efforts to give the people a show that is a show will be appreciated so far as eastern trade is concerned. We hear a good deal of talk about the product of the National Automobile & Electric Co., and that concern will receive a good deal of attention and inspection of its products by eastern visitors.

Already parties are being made up. In this city yesterday I learned that President L. D. Parker of the Hartford Rubber Works Co.; D. J. Post, of the Veedor Mfg. Co. and the Post & Lester Co.; Chas. F. Smith, formerly of Milwaukee and now of the Premier Mfg. Co., and several of the American Vehicle Co.'s people, probably consisting of President Geo. H. Day, Chas. E. Hadley and others, will leave Hartford in a bunch.

At Boston a party will be made up consisting of Jas. E. Linscott; Mr. Patterson of the United States Supply Co.; W. S. Atwell of Wm. Read & Sons; Mr. Emerson, of the Dow Electric Co.; Mr. Day, of the Lowell Model Co.; Messrs. Gray & Davis, the lamp makers of Amesbury, and a lot of others.

From New York a whole carload will almost surely come, and Philadelphia promises to send a goodly contingent, which will be joined by the Reading people in the automobile trade. It is freely predicted that from a selling standpoint, March being the most favorable month, the Chicago show will eclipse all previous records in the way of sales, as the

season will be practically open by April 1.

MR. LOOMIS AT HOME

New York, Feb. 23.—A Motor Age man found himself in Westfield, Mass., last week, the particular attraction in the city famous for its whips being Frank J. Loomis, of the Loomis Automobile Co., who is doing an all-round business in the automobile line.

Mr. Loomis, it will be remembered, created considerable interest at the first automobile show in New York when he exhibited his neat looking little runabout, listing at \$450. Since then his ideas have grown, so that he now shows a full-grown carriage, listing at \$750. But that is not all. Mr. Loomis also makes delivery wagons and carriages of various styles, listing at from \$750 upward.

The pleasant chief of police volunteered to conduct the writer to the Loomis automobile factory, and during the walk expressed his admiration of Mr. Loomis, who, he declared, has all the necessary qualities to become great and rich; he hoped that a Pierpont Morgan would take hold of Loomis some day and make it possible for him to become rich in a few years, as he, the chief, was quite sure that the necessary brains were there. That same chief inspected the factory closely and ventured the opinion that he had the automobile fever, and that one of those "critters," meaning the automobiles, would be a good thief catcher.

Mr. Loomis was found busily superintending the testing of a lot of carburet-

ors, which had to be shipped out that day, and at intervals giving directions as to the finishing of some of his patent mufflers which had to be shipped to London in a hurry.

The only trouble Mr. Loomis seemed to have on his mind was that he was cramped for factory room. He hopes shortly to have a much larger factory, where he can find all the space necessary for the completion of his varied manufactures. He issues four little booklets, one devoted to the muffler, one to the carburetor, one to the running gear and the last to carriages. These he will be glad to send to any applicant.

WATCH OUT FOR LIGHT RED FLUID

Philadelphia, Feb. 25.—Steam and gasoline as applied to the propulsion of vehicles are destined in the near future to receive a solar plexus jolt which will make them so expensive—comparatively—as to drive them out of the business. That is, if the stories in the public prints are to be relied upon. A local daily last week printed a first-page article which, while it read something on the order of a prospectus preceding an issue of stock, nevertheless caused much comment among the numerous devotees of automobilism hereabouts.

The article in question concerned the wonderful discovery—after the usual number of years of hard work and fruitless endeavor—by a young Philadelphian, George T. Eyanson by name, of a "fluid, light red in color," a few gallons of which generate sufficient electrical energy to propel an automobile 150 miles. It is claimed that a boat, the engine of which is run by one of these red-fluid propelled batteries, has been in successful operation upon the Delaware river since 1897.

The idea of the invention is the overcoming of the limited traveling radius of the storage battery system and the recovery of the electrical power after it has been exhausted from the solutions. This result Mr. Eyanson is said to have achieved, the power-producing properties having been brought back to their original state, chemically pure and at a nominal cost. The Eyanson battery is to be a part of the vehicle and it will not be

necessary to remove it for charging. The traveling radius will depend solely upon the quantity of "fluid, light red in color," carried in the generator, the ordinary capacity of the battery, however, as above stated, being 150 miles.

A forecast of the comparative cost of operating is given in the article. Under present conditions, it is stated, the cost of carrying four persons one mile in the ordinary public electric vehicle now in use on Philadelphia's streets is about four cents. Under the Eyanson system the cost will be from one to two cents a mile—or, to be a little more exact, the difference in favor of the new system will be about 13 cents for every eight miles.

An important claim made for this "fluid, light red in color," is that there is absolutely no leakage of energy from it; that it will be as potent at the end of twenty years as it is to-day. It is not alone applicable to vehicle propulsion; it may be used to run boats, to light railroad trains, to propel street cars, for power and light in factories, etc. It is claimed that a stationary electric plant, operating ninety 10-candle power lamps, has been in operation in the factory of Eyanson & Armprister since last fall, the basis of the plant being this "fluid, light red in color." The Eyanson battery may be charged for sixty hours, and in recharging it is only necessary to draw off the spent solution and run in a fresh supply through a hose.

If, as the article in question asserts, the inventor has the New York Astor and the Philadelphia Drexel millions back of him he cannot possibly want for the necessary means to exploit his invention. Separate companies are being formed, so 'tis said, to build and operate automobiles on the Eyanson system and to apply it to lighting purposes, the former with a nominal capital of \$100,000. There are no stocks or bonds in the enterprise, so says the article, and those interested—Colonel John Jacob Astor, Anthony J. Drexel, John R. Drexel, John Lowber Welsh, Herman Dercum, Charles P. Sherman and the inventor—hold, as trustees, the 35 or 40 patents issued in this and foreign countries. "In the utilization of the patents, of course," says the article, "several companies are being and will

be formed, but the patents will remain in the control of the trustees."

The millionaires who have furnished the bone and sinew whereby Mr. Eyanson has been enabled to pursue his investigations are said to be interested in the scheme in the following proportions: The Drexels, 40 per cent; Astor, 10 per cent; Welsh, 10 per cent; Dercum, 10 per cent; Sherman, 6 per cent, and Inventor Eyanson, 24 per cent. The aggregate wealth of the backers of the inventor is said to be \$440,000,000.

The firm of Eyanson & Armpriester is located at Seventh and Commerce streets, this city.

GOING TO CHICAGO SHOW

Indianapolis, Ind., Feb. 24.—"I shall be at the Chicago automobile show and am glad to be able to say so." This statement was made to a Motor Age man by George C. Detch a few days ago. Mr. Detch also said that he had made arrangements several weeks ago to be at the show, but at that time he did not know that a certain eastern manufacturer would pay his expenses!

Mr. Detch has closed a deal with the E. R. Thomas Motor Co., of Buffalo, whereby he will be the only Indianapolis dealer to sell the Thomas motor bicycles. Louis Oilinghouse, of the Buffalo concern, spent several days in the city last week, and it was through his efforts that the deal was made. Mr. Detch has sent in an order for four motor bicycles and expects to duplicate the order in a few weeks, as some machines have already been sold.

STRANGE STORY OF EDISON'S BATTERY

The connection of the name of Edison with any electrical enterprise is generally accepted as sufficient evidence that something is "going to drop." The Sunday papers, therefore, gave considerable prominence to a story about a battery which he is said to have invented and which, according to the story, is to be a real storage battery, and not one of the common variety of commerce. The report is said to have been given out by a member of a prominent firm of attorneys in New York, who, according

to the interview, made the statement that he knew more about it than anyone else in the world, except Edison.

Motor Age has authority for the statement that the coming battery differs little from those in general use, and that no attempt has been made to store electricity as the report led people to infer. There has been but one battery which actually stored electricity. It is known to the world as the Leyden jar. The Edison invention will be nothing of that sort, but will be, in principle, the same as any other commercial battery, embodying, of course, some ideas which Mr. Edison believes will improve its efficiency.

Edison is not an inventor, in the common acceptance of the word. He is an experimenter, an investigator, a seeker after the results of combinations of elements provided by nature. He is at work day and night. His health, his clothing, his food, all alike are neglected when he has work in hand in which he is deeply interested, and that means practically all the time. He has a staff at work twenty-four hours a day, and often spends days in his laboratory with no more rest than he can obtain on a table or a chair.

COOPER TO FINANCE CROWDUS

At last the Crowdus battery, on which the inventor has been at work for years, is to be properly exploited. Mr. Crowdus has interested Frank Cooper, of Siegel & Cooper, and a number of his friends, and arrangements are going on for the manufacture of batteries, motors and complete vehicles.

Like all inventors who are not blessed with unlimited means, Mr. Crowdus has had to contend with many difficulties. He has spent years of labor and thousands of dollars of his own and his friends' in perfecting his inventions. Three years ago he went abroad and disposed of his patents for some of the European countries. The proceeds went right back into the work in hand.

The Crowdus company has been in existence for three or four years. Among the people interested in it was Charles

Dickinson, of the Dickinson Seed Co., a man of great wealth, and who still holds his stock in the original company.

Among the active men in the new



At the Famous Land's End Hostelry

company are Mr. Cooper, his son, and one of his nephews. The company will make complete vehicles, but will also sell batteries and motors to all who want to purchase. People who have seen the vehicle describe it as the prettiest little affair yet offered to the public.

The new company will have a great advantage in the selling end of the business through the Siegel & Cooper connection.

TO BUFFALO ON MOTOR BICYCLES

Indianapolis, Ind., Feb. 24.—From Indianapolis to the Pan-American exposition at Buffalo on motor bicycles. Such is the trip planned by twenty-four young men of this city. W. J. Kane is the promoter of the trip. On Thursday an order for several motor bicycles was forwarded to the E. R. Thomas Motor Co., together with a proposition relative to the trip.

Mr. Kane is an enthusiastic motorist, being the possessor of a motor vehicle and a motor bicycle. The twenty-three

men who are to make the trip with him are in his employ. They expect to start from here about the middle of August and they will take their time in making the trip, it being the intention to remain on the road at least nine days and to spend about four days at the exposition.

While the trip will be mainly for pleasure, it will also be made to advertise the Thomas motor bicycle and the business conducted by Mr. Kane. According to present arrangements, the party will go from Indianapolis to Richmond, Dayton, Piqua and Cleveland. A day will be spent in the latter city, where the members of the party will visit the Winton Motor Carriage Co.'s factory and other places of interest. From Cleveland the party will take the National road to Buffalo, stopping at the larger cities. If no changes are made in the present arrangements, the party will be the guests of the Thomas company.

AT LAND'S END AND OTHER PLACES

*New York, Feb. 23.—S. T. Davis, jr., of the Locomobile Co. of America, president of the National Association of Automobile Manufacturers, returned last Thursday from his trip abroad. Most of his business attention was given to the London branch of his company, his only trip to the continent being a brief pleasure one to Switzerland.

Mr. Davis found the automobile world greatly interested in the result of Egerton's trip in a Locomobile from John O'Groats to Land's End in twelve days. This was universally acknowledged to have been a wonderful record for a mid-winter run of 880 miles in all.

The way the Locomobile stood the test, however, was much more remarkable than even the time record. Despite a gale blowing most of the way the flame blew out but three times on the journey and it was not necessary to touch a tool to the engine. Sturmy holds the record for the course, but his run was made under favorable conditions in summer.

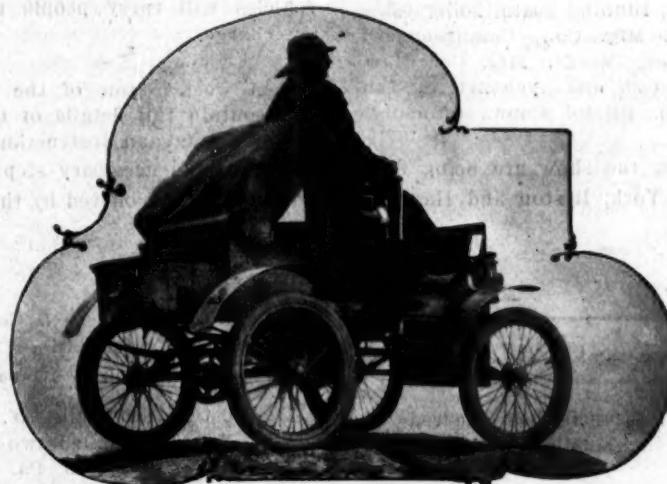
Mr. Davis was greatly pleased at the encouraging business situation he found for his company. Over thirty vehicles

had been sold in December. The company has two places in London—a show room at 52 Sussex street in South Kensington and a storage and repair station at 81 Page street, Westminster. A large number of local agencies have already been established throughout the kingdom.

DISAPPOINTMENT IN BOSTON

Boston, Feb. 23.—The automobile manufacturers and others who have secured space at the Boston show were more or less disappointed over its abandonment and profess to believe that the promoters might have made it successful in a financial way, even from

a public admission standpoint. One of the manufacturers went so far as to say that he would have been willing to have backed it financially, having so much faith in the financial outcome. It is an ill wind, however, that blows no one good, and the Chicago show will be the particular beneficiary, as those people who had made up their minds to go to Boston will now go a little farther and take in Chicago. Some of them will exhibit there, and those who cannot are among those who are not very well provided with goods for shipment. Messrs. Eckhardt & Ashley, promoters of the Boston show, are said to be out of pocket considerably.



THE LOCO ON LAND'S END

ADDITIONS TO CHICAGO EXHIBITORS

SI X contracts for Chicago show space were closed during the last week and five more on Monday of this week. Since the publication of the last list the following have been added:

Scott Automobile Co., St. Louis, which will show about six electrical vehicles and a large display of batteries and fittings; Midgley Mfg. Co., Columbus, O., manufacturers of the recently introduced tubular wheels; Knox Automobile Co., Springfield, Mass., complete vehicles; American Roller Bearing Co., Boston, roller bearings; Brown-Lipe Gear Co., Syracuse, gears; Peter Forg, Somerville, Mass., forgings and parts; Gong Bell Co., Easthampton, Conn., automobile bells; Shelby Tube Co., Cleveland, steel tubing, running gears, boiler tubes, etc.; Crest Mfg. Co., Cambridgeport, Mass., motors; Veeder Mfg. Co., Hartford, odometers and cyclometers; Liberty Bell Co., Bristol, Conn., automobile bells.

Parties for the show are being made up at New York, Boston and Hartford.

Phinney's United States band has been engaged to give two concerts daily. The musical part of the program will not be the usual hum-drum entertainment, for the band will include a number of soloists of national reputation.

A charging station will be installed at the building for the convenience of exhibitors of electric vehicles. The plant is owned by the Coliseum company, which has agreed to furnish current at the lowest possible rate.

The Mobile company has just placed an order for two gigantic electric signs with the Chase Electrical Sign Co. One of these is to be used at the building and the other will tell people on Wabash avenue that the company is exhibiting at the Coliseum and that its vehicles will carry people there without charge.

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Next week's issue of the Motor Age will contain full details of the railroad arrangements and instructions to visitors as to the necessary steps to obtain the reduced rate offered by the railroads.

HAPPENINGS OF THE WEEK

George C. Rossell has secured the agency for the Mobile at Terre Haute, Ind.

W. B. Hamilton and Ira J. Hollensbe have established an automobile agency at Greensburg, Ind.

"I have just come from Omaha and other western cities," said Lew Keck, of the Badger Brass Co., on Monday, and have heard a lot of dealers out there talk about the Chicago show. I am convinced that the attendance of people from out of town will be a record-breaker. From Omaha at least six dealers will be here, including Mr. Colt,

of Lee, Glass, Andresen & Co. My company is looking forward to one of the most successful shows ever held."

The Foster Automobile Co., of Rochester, N. Y., has supplied two busses for public use at Lewiston, Pa. They will carry eight people and are equipped with 12 horsepower steam engines.

The Hotel Royal Palm at Miami, Fla., has purchased four Locosurreys and established a livery and transportation service between the hotel and the golf links.

The Chicago Carriage Lamp Co. has produced some novel designs for the Woods-Waring Co. One of them is an acetylene lamp designed to fit the French horn which is to form one of

the adornments on the front of the Woods vehicles.

A second French automobile and cycle show will be held at Versailles, March 14-19.

The American Harrow Co., of Detroit, will be represented at the Chicago show by L. M. Van Riper.

The Morgan Motor Co., of Brooklyn, has moved from 214 Hancock street to more commodious offices at 55 Furman street.

The Crest Mfg. Co., of Cambridgeport, Mass., has been elected to membership in the National Association of Automobile manufacturers.

Pugh & Rottman, of Terre Haute, Ind., have just sold their first motor bicycle to Frank Hullman and have ordered a new supply from the maker.

At Young's Ocean Pier, Atlantic City, N. J., from April 1 to 13, a combined automobile and pure food show is to be held. The pier is 2,800 feet long.

The Neverslip Tire Co. has been organized at Watertown, N. Y. Its capital is \$10,000. Its purpose is to make and sell tire covers and other articles.

J. A. Carter, president and general manager of the Geneva (O.) Automobile & Mfg. Co., organized a few weeks ago, writes Motor Age that it is not true that he has a vehicle ready. "We were organized on January 11," he writes, "had our factory to put in shape, machinery to buy and began at the bottom, making our own drawings and patterns and building something entirely different from anything on the market. We are progressing fully as fast as we anticipated and expect to have a complete wagon out not later than April 1, and to be able to make deliveries in May. The

writer will be in attendance at the Chicago show during the greater part of the week."

The Van Nort Mfg. Co. has been incorporated at St. Louis to manufacture and sell automobiles. Its capital is \$2,000.

It is rumored in trade circles that there will shortly be a combination of a number of the plants now engaged in the manufacture of brazed tubing.

"We have no doubt," says the National Cycle Mfg. Co., Bay City, Mich., "that the Chicago show will be as nearly a perfect exhibition as good management can make it.

The Pennsylvania Electric Vehicle Co. has made a report showing that the operating expenses for 1900 were \$64,700 and the receipts \$45,980. The company has \$43,715 in the treasury.

The secretary of the Overman Automobile Co., writing to a Chicago house, expresses the opinion that "Chicago is going to have a very successful show." This opinion is generally shared by the trade.

Byron V. Covert & Co., of Lockport, N. Y., who make one of the prettiest little light runabouts on the market, are in correspondence with the management of the Chicago show and will probably have an exhibit there.

The Badger Brass Co. has arranged a novel exhibit for the Chicago show. It will be something never before attempted, and, for fear competitors may adopt it, the few who are aware of the plan have been sworn to secrecy.

It is reported from Worcester, Mass., that W. E. Taft, a Boston inventor, is there trying to interest capital in an automobile which he has made and to try to get possession of the factory recently vacated by the Locomobile company.

All of the Progressive Dealers Will Visit
the Chicago Automobile Exhibition March
23-30.

From the Four Winds

HERE is a question worthy of attention: Will the motor bicycle lead to a revival of bicycling club spirit or will motor cyclists become active in newly organized automobile clubs? Some of the automobile clubs of this country are setting a precedent of exclusion of the motor cyclists. For instance, in road contests which have been outlined in the east it has been specified that competing vehicles must seat two persons side by side. This ruling not only excludes the motor bicycle but the two passenger motor tricycle and quadricycle as well.

On the other hand, one of the most active bicycle clubs in the country at the present time, the Century Wheelmen, of Philadelphia, has taken into its fold many users of both automobiles and motor bicycles and it is probable that the most enthusiastic owners of motor cycles in Quaker town will be those members of the Century Wheelmen who have taken or will soon take up the new sport.

In manufacturing circles the motor cycle has its staunchest advocates among bicycle manufacturers. The makers of automobiles, as has been previously pointed out from time to time, show, in most instances, an inclination to look down upon the motor cycle as though it were a sort of economical understudy to the motor carriage. This much is certain, however: both the automobile and the motor cycle have their places in the trade and the sport; neither will overshadow the other; they will grow up side by side. Granting this, and also the fact that bicycle manufacturers as a class are taking more inter-

est in the development of the motor cycle than are automobile manufacturers, that bicycle clubs are prepared to give the motor cycle a warm welcome and that bicycle dealers throughout the country have all eyes open to its possibilities, it seems at least probable that the future club home of motocyclists will be within the walls of cycling organizations. These may continue to exist under the present regime or may be reorganized in personnel and character, but they will remain distinctly cycle clubs and their membership will doubtless include riders of both pedal and motor driven cycles.

WATER IS "NO GOOD"

"While both the steam and the gasoline vehicles are as free from danger as it is possible to make them," said a manufacturer recently to a Motor Age man, "still it is just as well to be prepared for emergencies. There have been remarkably few accidents when you consider the number of inexperienced people who are handling automobiles. Still that is no reason why the owner of a vehicle should not provide for all possible accidents. Few persons not manufacturers understand gasoline, and I cannot think of any better object lesson than that recommended by a well-known builder of naphtha yachts. He suggests to all buyers of his boats before they start to operate them to throw a cup full of naphtha on the water and then throw a lighted match on it. They can get a better understanding of the power under their control in this manner than in any other way. Many peo-

ple keep buckets of water around their barns or stables where their vehicles are stored, with view of using them in case the gasoline is spilt and becomes ignited, or, as sometimes occurs, the burner becomes flooded and bursts into flame. Water for this purpose is not only useless, but in many cases causes the flames to spread. In our stables we keep pails of ordinary common whiting for this purpose, and it has proved better than anything else. It not only drowns out the flames, and prevents spreading of the gasoline, but quickly absorbs it before any damage is done. My advice to all users of gasoline and steam carriages is: Keep plenty of whiting on hand where it can be quickly reached, and you need never have any fear in handling the gasoline."



PRANKS OF THE GRAND TURK

Now that the Grand Turk has contracted the automobile fever we shall, of course, expect to see a large trade done with Asia Minor. It seems that the Sultan Abdul Hamed is going to buy each one of his wives an automobile, not to say anything about a lot of other grand Turks of his court whom he insists must learn to drive the new vehicles. It seems that one of the greatest pleasures of the melancholy-looking man of Constantinople these days is to sit under a rose bush and watch the semi-grand Turks take headers out of their automobiles. It is said, too, that the sultan is an expert and is satisfied with nothing less than top speed, and that sundry of his "well wishers" are busily predicting his finish one of these days expecting to hear of him going over the wall into the Golden Horn. The present mounts of the man of many wives are electric, but our American minister must see to it that he experiments with different varieties—some of the 57.



AN OBLIGING AUTOMOBILE

A representative of this paper recently visited the factory of Grout Bros., Orange, Mass., and there saw a practical demonstration of the fallacy ex-

pressed in an eastern paper that a steam carriage is no good during the winter.

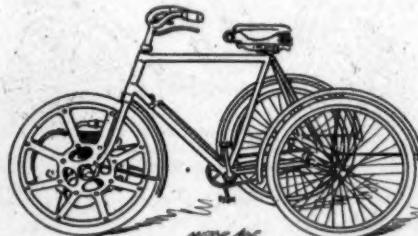
"Come with me," said Mr. Charles Grout, who is a man with a sort of razor-edge business ability, as he led the way to an old mill a stone's throw from the Grout Bros' factory, "and I will show you a new wrinkle as to the uses one of our wagons can be put to."

On arriving at the building the writer was conducted to the north side of same, where the temperature was somewhere near zero, and there discovered a New Home steam carriage furnishing steam with the aid of a pipe through the building window to a stationary engine inside, which in turn was furnishing power to bore out a large cylinder which was to go later into the Grout factory. The workman, on arriving to do the job, had been in a quandary as to where he would get his power from to bore the cylinder out, and the bright idea seized Charlie Grout, so the carriage was hauled to the north side of the barn, and with 150 pounds' pressure the work was done splendidly. Mr. Grout thinks that the steam carriage will be able to saw wood, churn butter, and do a lot of those things about the farm, and he has not filed any patent claims since his discovery.



ALL WITHIN THE FRONT WHEEL

Many Motor Age readers doubtless remember the English Singer motor bicycle which was illustrated and de-



The Singer Motor Tricycle

scribed a few months ago, and whose distinctive feature is the incorporation of all of the motor mechanism within the rear wheel. The accompanying illustration presents the new Singer motor tricycle in which the same prin-

inciple of drive is employed, the only difference being that the front instead of the rear wheel is used as the traction wheel. The wheel contains the motor, gasoline tank, carburetor and magnetic ignition device. All of the operations of starting, stopping and controlling the engine are effected by means of levers on the handle bars. It is claimed that the tricycle not only possesses the neatness and compactness which is characteristic of the Singer motor bicycle, but that it is also free from the front wheel jumping which is occasioned by the operation of many tricycles with motors hung on the rear axle.

RESULT OF HAYSEED LEGISLATION

"Locomobiles with complicated threshers attached and steam ploughs and fire engines are excepted." This paragraph appeared in Sunday's New York World in a telegram from St. Petersburg, which stated that the Russian minister of finance had clapped on 30 per cent increase of duties on certain American goods in retaliation for Secretary Gage's alleged favoritism of the sugar trust. "Locomobiles with complicated threshers attached" must be something new and may be the outcome of the attempt of a New York hayseed legislator who



Levassor-Bolisse Voiturette

wanted to have fenders put on all steam carriages used in New York city!

THE WIDOW'S MITE

We have all heard the name Levassor. We have commonly associated it with Panhard and thoughts of big racing cars. The name is now presentable in connection with the little front driving

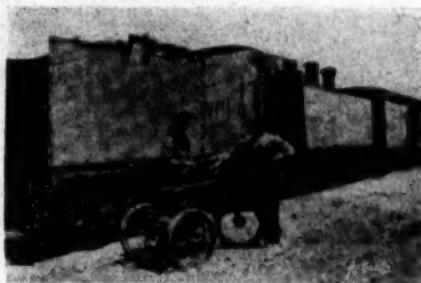
three-wheeler shown in the accompanying illustration, for this machine is the result of the combined inventive work of Mme. Emile Levassor, the widow of the veteran automobile builder, and one Jacques de Boisse, who are shown seated in it. This is probably the first instance in the industry of a woman assisting in the production of an automobile.

IT ASTONISHED THE NATIVES

Freedom, a paper published at Manila, tells of the effect of the first appearance of an automobile there on the native population. "A carriage going up Calle Real," it says, "without any horses attached was entirely too much for the average native and had its passage been followed by a prophecy that the world was coming to an end, there is no doubt that the majority of them would have fully believed the statement. Aside from the excited wondering crowd that followed the carriage expecting every moment to see it either stop or take wings and fly, many groups of natives gathered on the street corners to discuss the difficult problem and explain how it all happened."

"There were almost as many theories as to the power of the strange machine as there were Filipinos on the scene of the discussion. The wondering, bewildered people were getting farther and farther away from the truth and there is no telling what the discussion might have ended in or what new theories might possibly have been discovered as the direct product of their brain, when an old native who has long since crossed the summit of life's mountain came to the rescue. His age and experience combined with his depth of wisdom upon former occasions where wisdom was necessary, made him an accepted authority upon all controverted questions, and his opinion was sought and his explanation when given was entirely satisfactory and relieved the enormous strain on the minds of the wondering people. With a sarcastic wave of the hand as if to allay all the conjectures of the wonderful he informed them that it was built on the plan of the modern hand car used by

Mr. Higgins, president of the Manila and Dagupan railroad, when on his tours of inspection, and that seated inside the vehicle were several big strong Americans who were working the lever that gave the propelling power. The explanation seemed to meet with general approval by the listeners, who turned away with a disgusting grin at the idea of



A Warrior Bold Is this Motor Tricycle

working and perspiring beneath a tropical sun for the purpose of securing propelling power when horses were so much better, and some even suggested the use of the caribao, while they all agreed that it was nothing wonderful after all, and they wondered at themselves for not knowing as much from the first, and then

again wondered at the Americanos for working so hard."

MOTOCYCLES IN WAR

The motor cycle in war is neither a dream nor a failure. Here is a picture taken at Mafeking, South Africa, a short time ago, and which shows the British government's famous armored train "Spitfire," and a motor tricycle which has been extensively utilized for scouting purposes in connection with the train. The owner and rider of the tricycle is a member of the Automobile Club of Great Britain and is risking his carburetor and his life at the front for the sake of the king and to demonstrate that automobiles for army service are an absolute success.

Early steam vehicles were called road locomotives. Now history repeats itself, for many of the huge 35 to 50-horsepower racing cars which are being built in Europe are veritable road locomotives.

Two electric carriages have been contracted for by a company which will operate them in the public service between Hoquiam and Aberdeen, Wash. They are to seat twenty passengers and will cost \$4,000 apiece.



CHICAGO AUTOMOBILE SHOW

MARCH 23-30

Reduced Railroad Rates from all points in territory covered by the Central Traffic Association and the Southeastern Passenger Association.

Ask for details.



Morning sessions free to everyone engaged in the industry.

Exhibits by all progressive makers who seek western business.

Elaborate displays. Practical demonstrations.

A 20-ft. track encircling the largest building of its kind in America.

A profitable show at

THE RIGHT TIME FOR THE PEOPLE
THE RIGHT TIME FOR THE MAKER
THE RIGHT TIME FOR THE DEALER

THE MOTOR AGE MONON BUILDING CHICAGO



GET ACQUAINTED

There are many advantages to manufacturers dealers and buyers in becoming acquainted with other people in the industry

IN these early days of the trade everyone has much to learn—not only about the various forms of vehicles, but the peculiarities of each of them.



Personal acquaintance with manufacturers is one of the great aids to success.



The Chicago Automobile Show will be the means of bringing together hundreds of people to their mutual profit.



The dealer will learn from personal observation—he can never learn it by correspondence—what manner of men he may deal with.



Acquaintance begets confidence, if it is deserved. The show will furnish the opportunity for all to become acquainted.

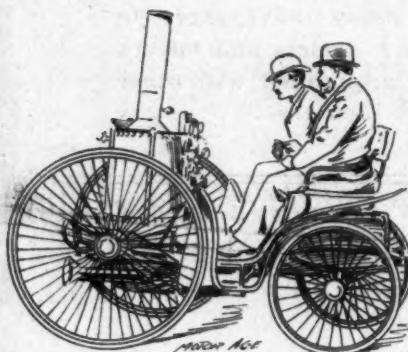


Dealers will come from all parts of the United States. You are cordially invited to join them. The morning sessions will be all your own—to talk business without interruption.



THE MOTOR AGE will be glad to furnish details of railroad arrangements and other information.

WHEN THE MOTOR INDUSTRY WAS YOUNG



Front Drive, Rear Steer DeDion Steam Carriage
Built in 1884

If the genesis of the automobile were made a separate story from the complete history up to date, it would comprise a recital of experiments with steam. Also some of the men who were first seen in the field of hydro-carbon motor development and whose names are now linked securely with standard patterns of gasoline vehicle engines used broadly, were the very men whose names would appear in the recounting of this steam era.

No better example is furnished than by Messrs. De-Dion and Bouton, who to Americans are known almost solely as

ularly, were early experimenters with steam vehicles and many of the principles now incorporated in the large steam trucks manufactured by them in addition to their numerous types of gasoline vehicles, were discovered in early efforts.

The accompanying illustrations show a few of the earliest DeDion creations.

These are but a small part of the experimental machines built by the same veteran during the eighties, but they are typical of the state of the art at that



DeDion on a Steam Tricycle Built by Him in 1887

time and present several first principles which are still utilized in vehicle construction.



A DeDion Steam "Voiture" of 1886

the manufacturers of DeDion-Bouton gasoline motors used both in Europe and the United States. Both, DeDion partic-

Charles R. Overman, who is in charge of the Washington branch of the Woods Motor Vehicle Co., met a lot of his old bicycle trade friends at the recent Philadelphia show. Charley Overman, as he is called, was always a favorite among the trade, and when manager of the Chicago Overman branch there was no more popular man in that city. As he was once manager of Overman's Washington branch, his acquaintances made then should now stand him in good stead.

THE MOTOR AGE

INFORMATION FOR
BUILDERS AND BUYERS.

SPRINGFIELD, Mass., Feb. 23.—This town bids fair to be in an automobile way what it once was in a bicycle way—considerable pumpkins. There are now four concerns here, and there is talk of others coming.

The Overman Automobile Co. of course commands a good deal of attention and is being watched very closely, for there is a belief that there is a good deal of latent power left in A. H. Overman, and that he will once more assert his energy and genius to its fullest.

The great factory at Chicopee Falls is a monument to Overman's organizing and constructive ability, as it is easily the most beautiful bicycle factory in America.

A Motor Age man talked to Mr. Overman the other day, and the old manufacturer of the famous Victor bicycle did not seem to regret that he had to part with his superb creation down by the Falls, and with resolute look and voice declared that man is superior to what he creates, and that he would create again an automobile factory that would be the joy of his friends. Mr. Overman said that when he is ready to ship his carriages he intended that they should be as perfect as the Victor bicycle he once made, and that he would not sell a carriage until he was sure that it was the best that he could make.

The Knox Automobile Co. comes next,

although in point of shipments they come first, and if you ever have an opportunity of seeing young Knox and listen to him talk Knox carriage, you will make up your mind at once that he is a born enthusiast and a young man of good intelligence and force.

He believes in the three-wheel carriage as made by them, and says that the recent shows have confirmed his opinion of it. All who go to the Chicago show will have an opportunity of seeing and riding in a Knox carriage on the track, as the company endeavors to carry more people round the track than any other firm.

The Warwick Cycle & Automobile Co. are making good progress with their steam carriages, and Mr. A. O. Very is busy at work these days with the double duties of shipping Warwick bicycles and attending to the carriage business.

The Skene American Automobile Co. is not well known in Springfield, owing to its factory being in Lewiston, Maine, but it will soon be well known if Arthur C. Eddy's plans do not miscarry.

Mr. Eddy has opened offices in the Carr building, and talked to a Motor Age man about the company's prospects. Mr. Eddy, who is employed in a local bank, stated that the company would probably remove to Springfield if certain arrangements could be completed, and it is believed that it was the Skene company that approached the Spring-

field Board of Trade with the view of moving its factory to that city.

Mr. Eddy states that the company is thoroughly satisfied with its progress so far, and said that he believed that it had a steam wagon equal to the best, but that it had been handicapped somewhat in having the factory and office so far apart.

The company has recently exhibited at Philadelphia, and there its carriage commanded much attention. Seven different types of vehicles are shown in their well gotten up catalogue.

TEMPLE'S ESTABLISHMENT

In a circular just issued to the trade the Ralph Temple Automobile & Supply Co. calls attention to a fact which will eventually work harm to people who must at this time plead guilty. "People find it unprofitable in many cases," says the circular, "to correspond with houses in the trade who often make no reply to inquiries or are unprepared to make deliveries."

It is impossible to blame people for being unable to deliver goods at this stage of the industry, but it is reasonable to expect that business correspondence will receive courteous attention. The Temple company makes reference to this matter in connection with an offer it makes to manufacturers to represent them locally. It is intended to have on exhibition all the automobile goods for which any reasonable mortal is likely to inquire.

The Temple company will circulate 100,000 catalogues, principally in Chicago. Its business, for the present at least, will be purely local.

The Temple company already has on hand samples of a number of the vehicles made by the National Automobile & Electric Co., of Indianapolis, the Century Motor Vehicle Co., of Syracuse, and others, beside Thomas motorcycles and other goods.

ERRATUM

In a recent issue of the Motor Age there was presented a picture of three Autocars plowing their way triumphant-

ly through snow inches deep. In connection with the illustration was told the story of the progress of the Autocar Co., of Ardmore, Pa., and in this by one of those errors which are proverbially laid at the door of the suffering printer, the phrase motor vehicles was unfortunately made to read steam vehicles, thus conveying the wrong impression that Autocars are propelled by steam. Autocars are gasoline vehicles, and good ones.

MILWAUKEE INSTRUCTION BOOK

The Milwaukee Automobile Co., of Milwaukee, has published a little book on the subject of the proper starting and operation of Milwaukee steam carriages. Each carriage when it leaves the factory has a copy of this instruction book in a box of spare parts, together with the tools furnished. Also, the letter which goes to the purchaser when the carriage is shipped directs his attention to the booklet and advises him to use it as his guide in starting, driving and caring for the vehicle.

The Milwaukee company will have ready within thirty days a steam driven launch, in which the automobile power set with slight modifications, will be employed. This will be manufactured by a separate company, called the Milwaukee Launch Co.

THE HAMPDEN MOTOR BICYCLE

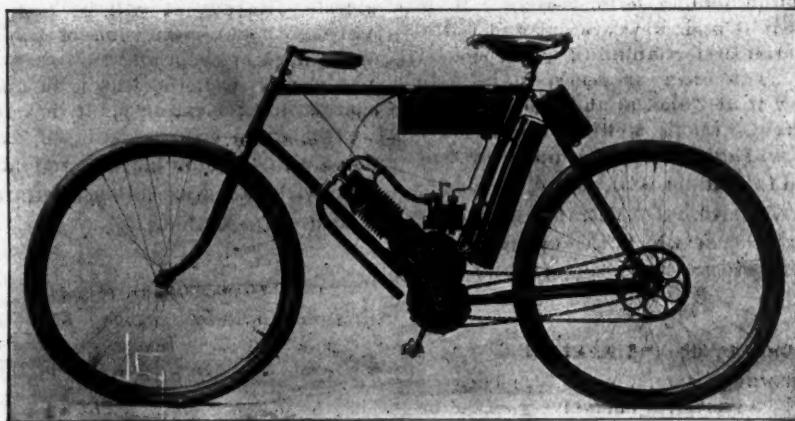
The motor made by the Hampden Mfg. Co., of Springfield, Mass., has already been described by Motor Age. The company has now produced a complete bicycle which is here illustrated. The makers announce that it is built of the best material obtainable and with a view to withstanding the strains to which such a machine is necessarily subjected.

The motor casing is built into the frame, thus insuring permanent alignment of the driving mechanism. The motor casing is above the crank shaft, the latter being driven by spur gears on the motor and, in turn, driving the rear wheel by a chain.

Every man who gets out a new machine considers it his duty to produce

something new in carbureters and this has not been neglected in this case. It is operated by a float and provided with a throttle to control the speed of the engine. The machine is controlled entirely from the handle bars. The Hampden motor bicycle has a maximum speed of twenty-five miles an hour and, equipped as here illustrated, carries gasoline for

ous component parts of the motor outfit which is designed to be fitted to any bicycle. One of the most noticeable features in connection with the Steffey motor set is that the motor is water cooled and thus can be encased. The company will sell castings ready to be machined and assembled, accessories separate or in complete groups, and the entire set



THE HAMPDEN MOTOR BICYCLE

a seventy-five mile journey. The makers give the weight as 80 pounds, the wheel base as 48 inches and the width of the tread as 6 1-8 inches. The frame is 23 1-2 inches high and the wheels are 28 inches with 1 3-4 inch tires.

FOR THE FIRE CHIEF

In the Grout Bros. factory, at Orange, Mass., a Motor Age man saw recently a specially designed light carriage for the chief of the Springfield, Mass., fire department. The carriage was finished superbly, and behind was found a seat for an attendant. A portable fire extinguisher is also to be a part of the equipment. The carriage will show a speed from 20 to 30 miles an hour. It is to be delivered early next month.

STEFFEY FACTS

Two recently issued folders convey many interesting details of the Steffey motor bicycle, manufactured by the Steffey Mfg. Co., Philadelphia, and the vari-

of motor parts and appurtenances finished and assembled ready for attachment to the bicycle. The Steffey motor bicycle was one of the very first brought out commercially in this country.

ABOUT DALZELL AXLES

Settled down snugly between the Berkshire Hills, at South Egremont, Mass., just as if it had been dropped there by some big bird in its flight over the mountains, is the factory of the Dalzell Axle Co., which concern has supplied axles to carriage makers for over half a century. South Egremont is just four miles south of Great Barrington, a famous summer resort in the Berkshire Hills. Why a factory was built just at that spot is hard to say, but it is a veritable iron and stone production of man placed right in Arcadia, for the village of 300 people is situated in one of the most beautiful scenic spots in America.

To reach it, a Motor Age man last week had the choice of waiting for a stage coach, which runs between Great Bar-

rington and the factory once a day, or chartering a special chariot, which he did, but was warned to look out for snow drifts especially as he elected to be his own driver. The factory was reached without mishap and a cordial welcome was extended by Mr. Dalzell, who appreciated the enterprise on account of the weather conditions.

The Dalzell axle is a sort of Tiffany production among axle makers. It is said that it seldom wears out and is the safest and easiest running of its special breed. The company hopes to be able to show it at Chicago, at the automobile exhibition, where a well-known parts dealer will exhibit it. The company will be glad to send its booklet and other particulars, which fully explain the merits of the axle, of which the company has sufficient stock on hand for immediate shipment.

WONDERS OF THE KEATING

Middletown, Conn., Feb. 23.—The old slogan, advertised extensively two or three years ago, that the Keating was "365 days ahead of them all," bids fair to be repeated in the case of the Keating motor bicycle, which the friends and critics of Robert A. Keating declare to be fully up to the standard of Keating productions. A Motor Age man visited Middletown to-day and found Mr. Keating busy superintending the shipment of orders for Keating bicycles, including a large one from the west. In response to a question about his motor bicycle, Mr. Keating said:

"It is true that we are ready to place on the market a motor bicycle which we are persuaded, after seeing others, will be the most radical improvement yet seen. This bicycle is the result of three years' steady and close application, and those who know something about motors and their construction tell me that I have got something that will create a furore when it is seen."

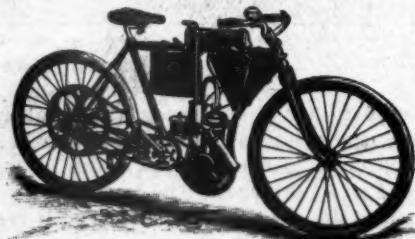
The writer did not see the bicycle, but W. J. Greer stated that it would very likely be seen at the Chicago show, and declared that it is such a wonderful departure that some of the motor bicycles so far made will look like veloci-

pedes when compared with the modern bicycle. Greer is a pretty hard headed chap, was one of the leading branch managers for the Union Cycle Co. for years, and is a mechanical critic of no small ability. In a note to the writer Mr. Greer said: "I had the pleasure to-day of seeing the first motor bicycle I have yet seen. Never was I more surprised in anything than in our motor bicycle. Its advent will be such as to make good our reputation of being '365 days ahead of them all.'"

Frederick A. Betts, who is in financial charge of the Keating plant, has invited several engineering experts to examine the Keating motor bicycle, and he says that, without an exception, their reports have been favorable.

OXFORD MOTOR BICYCLES

Among the manufacturers of motor bicycles who will be ready to make deliveries for this season's trade is the Ox-



The Oxford Motor Bicycle

ford Mfg. Co., of 931 Chestnut street, Philadelphia. This company will begin to ship motor cycles on April 1. The Oxford machines will be fitted with Parkin motors and will be built in 21 and 23-inch frames. In constructing the motor the firm uses the Higbee joint thread, which prevents the parts from working loose or becoming shakily from constant use. The machine fitted with 1½-horsepower motor will sell for \$200; with 1½-horsepower motor, \$225, and with 2½-horsepower, \$275.

The firm is also building a neat three-wheeled carriage to seat two people side by side, which it is said can be easily handled and will travel at from ten to twenty miles an hour. The body will be phaeton style, upholstered in various

styles of cloth. The carriage will be fitted with a Parkin motor of 3½-horse-power, or a 5-horsepower, with a two-speed gear for the better negotiating of hills.



AT WATERBURY, CONN.

Waterbury, Conn., Feb. 23.—The New Era Mfg. Co. reports a good business with its bicycle sundries and automobile lamps. A representative of the company will be in Chicago during the automobile show.

The Waterbury Ferrell Foundry & Machine Co. is enjoying a splendid run of business and Secretary-Treasurer Fulton told a Motor Age man that his company is taking care of a goodly number of automobile makers' orders for heavy machinery, cutters and presses. Mr. Fulton is interested in the automobile business and is gathering data preparatory to providing the Fulton family with an automobile. Whether it will be gas, steam or electric he does not at present know. Mr. Fulton's three boys, one of whom will graduate from Yale this term, will soon be ready for business careers, and the college man, who recently completed a twenty-four weeks' trip to the Pacific coast with the Yale Glee and Mandolin Club, of which he is a member and is also business manager of the Yale News, the college paper, will soon be in harness at his father's works.

Manager John Donaldson, of Randolph-Clowes Co., of Waterbury, says that his firm is laying plans to keep well abreast of the demands of automobile manufacturers. These people supply copper and brass tubes and boiler material, and have extensive works near the railroad depot.



A Motor Age man was in Rome, N. Y., the other day and learned that the Hardy Compressed Air Motor Co. is experimenting and actually building an experimental line of motor bicycles and other vehicles, the power, of course, to be compressed air. Mr. Graves, a wholesale druggist, who is a member of the Rome Business Men's Club and an acquaintance of the writer, says that something great

will come of the compressed air motor vehicles, as the company is well financed and has demonstrated its ability to propel street cars and locomotives by compressed air power. It is stated, also, that the company will put out a tricycle and a quadricycle which will have a speed of forty miles an hour.

The Stratton Motor Bicycle Co., 7 Wall street, New York, has published a neat catalogue describing and illustrating the Stratton motor bicycle, reference to which has been previously made in the Motor Age.

The Fellows Gear Shaper Co., of Springfield, Vt., is selling its gear cutters and shapers to automobile manufacturers. The Fellows people are old machinery manufacturers and have brought out some clever things in the past.

The managers of the Keystone Wagon Works, Reading, Pa., are going after automobile business although their specialties are drays, ice wagons and the Keystone dumping wagons. Geo. W. Biebel is the general manager of the company, which has supplied bodies for several automobile makers.

The Automobile Gazeeteer Co., 506 St. James building, New York, will shortly issue a directory of the automobile and bicycle trade, which it claims is the first and only book of the kind published. It probably had not heard of the Mensch, Chicago, book which is now on the market.

Mr. Goold, of the James Goold Co., carriage builders, of Albany, who have been in business nearly a century—since 1813 to be strictly correct—is said to have built a carriage for the great Napoleon, who used it in getting away from Wellington after the scrimmage at Waterloo. The Goold company is making a specialty of bodies for automobiles and turns out something of the top notch order, the price being in keeping with the work. Mr. Goold, speaking to a Motor Age man recently, said that the automobile trade will bear watching and he expects that it will eventually become a tremendous business. He discussed the various forms of power entertainingly and like a good

many others sees the good points of the three. The Goold plant occupies a large area.

The DuBois Automobile Agency, 220 Broadway, New York, offers a torch heater for users of steam carriages. It is a receptacle for gasoline into which the torch may be laid and the gasoline ignited. When the job has been done the heater may be folded up and placed under the footboard of the carriage.

Kelsey & Co., of New Haven, are marketing a clever thing in metal steps for carriages and automobiles, and have received a good many orders for them. Mr. Kelsey declares they never break unless given extraordinary usage and are perfectly non-slipping. The steps are made plain or fitted with rubber.

The Jamesville (N. Y.) Mfg. Co. is making a regular pattern steel carriage wheel, a ball-bearing steering device for automobiles, ball-bearing hubs, ball-bearing axles and attachments. Manager Hotaling believes that his company will secure sufficient business in a short time to keep its modest little plant running night and day.

W. L. Bundy, of the Bundy Mfg. Co., is endeavoring to form at Binghamton, N. Y., a company to manufacture the Miller sectional pneumatic tire, recently patented, and for which claims of great utility and convenience are made. The Miller tire is an exception to sectional pneumatic tires in that it has an inner tube.

Secretary-treasurer Fulton, of the Farrell Foundry & Machine Co., Waterbury, Conn., and Frank J. Knox, of Frank J. Knox & Co., the Hartford hardware specialty company, have pronounced symptoms of the automobile fever, and told a Motor Age man last week that they would try and tame the beast in the spring. The former thinks well of the electric, and the latter believes that the gasoline motor is the best thing.

These are two solid and wealthy men, and will be welcome additions to the automobile ranks.

The demand for Wheeler endless tires, made by the India Rubber Co., of Akron, O., is steadily increasing. The makers are about to apply them to a fire engine which will give them the most severe test to which rubber tires have ever been subjected.

Automobile bodies of every description are manufactured at the plant of the Franz Body Mfg. Co., of Akron, O., which has unexcelled facilities for the work. When a Motor Age man called there recently the place seemed to be running up to its capacity, which means the production of an immense amount of work.

One of the novelties which has been used lately in automobile construction is Sell's flexible steel pipe, a corrugated, air-tight metal pipe which can be bent to any angle and is practically indestructible. The pipe is made in steel and copper, and Samuel Harris & Co., 23 and 25 South Clinton street, Chicago, are the American sales agents.

C. S. Conloy, manager of the Port Chester (N. Y.) Bolt & Nut Co., stated recently that his company is doing all it can to keep up with the tremendous rush of orders. These people do a general business with carriage manufacturers all over the world, and recently turned their attention to the automobile trade, of which they are getting a fair share.

The attention of the trade is called to the offer of the Ralph Temple Automobile & Supply Co. to take care of the exhibits of those who would like to be represented at the Chicago show without sending special representatives. The Temple company has secured a large amount of space for this purpose and will provide the stands, attendants and other necessities. It announces that the charge for the service will be nominal.

Materials for Building Motor Vehicles and Motor Cycles Will be Displayed in Great Variety at the Chicago Automobile Exhibition, March 23-30.

In a Personal Way

W. J. Parrish has sold his interest in the Buffalo Enamel & Stain Co. to the other partners, Messrs. Parker and Simmons.

C. A. Benjamin, who has been touring the south for the Locomobile company, has opened a branch at Atlanta, Ga., and has a stock of vehicles there.

B. J. Carter, of Jackson, Mich., has been engaged for a long time preparing for the manufacture of vehicles. They will be of the steam type, fitted with 2½-horsepower engines.

Albert Gerde, of Sacred Heart, Minn., has purchased the necessary parts to manufacture an automobile. He wants the distinction of having made the first in the neighborhood as well as the experience he will gain in building it.

Carl Fisher, of Indianapolis, now on the road for the Mobile company, was in Chicago on Monday and has gone to New York. He tells the same story as other travelers about the coming of dealers and others from outside points to the Chicago show.

Mr. Duryea, an inventor of note, and who is no relation to Charles E. of that name, is located at 50 Broadway, New York, where and at his factory on Varick street, he is working assiduously on the development of automobiles. He is said to have two or three French experts assisting him.

Dr. Ray V. Pierce, of Newark, N. J., is interested in the Ideal Cash Register Co. and the American Engine Co. He is also at the head of the Dr. Pierce Auto Mfg. Co. which has been operating at Newark and Rahway. This company will now remove to Bound Brook. Hugh C. Pierce is manager of the company.

Dick Welles, of the Badger Brass Co., which makes the Solar lamps for automobiles and cycles, was in Chicago on Monday. He is still suffering from the accident which laid him up with blood poisoning six weeks ago, and is obliged to use crutches. He will be in his old

form at the time of the Chicago show, however.

John V. Rice, Jr., of Edgewater Park, N. J., whose place is between Philadelphia and Wilmington, Del., showed the Rice sparker, his new sparking device, at the Philadelphia show. The John V. Rice, Jr., company, whose laboratory is at Edgewater Park, will either market the device or sell it outright. The chief claims for it are that it has no springs, has positive motion and no platinum.

Jack Greer, for so long Philadelphia manager of Union bicycle branch, recently accepted an office position with the Keating Wheel & Automobile Co., of Middletown, Conn. Mr. Greer was in Europe the greater part of last year attending to some matters for a Philadelphia silk mill. He takes to Middletown a ripe experience as a salesman and office man, and will be of great value to the company.

Dick Robe, the Albany (N. Y.) pioneer bicycle dealer, stated last Saturday that he was fixing up an automobile selling program. Mr. Robe is one of the few Albany dealers who have been uniformly successful, and a profit maker. Mr. Robe is said to have quite a snug bank account, and when seen the other day was busily talking the beauties of the bicycle to three prospective purchasers, although the snow was on the ground.

Arthur Benjamin, the same old Ben who sold bicycles in the days gone by, is doing a good job of press work down at Atlanta, where he has just opened an agency. His latest escapade is to be hauled before the city clerk to ascertain whether it is necessary to take out a license to sell the machines. The clerk didn't know and didn't seem to care. In preference to taking the trouble to look up authorities he took a ride with Ben, who forthwith got a half-column story in one of the papers out of the incident.

Before the close of the Locomobile factory at Worcester, prior to the removal of the plant to Bridgeport, the workmen held a celebration in the form of a dinner at the factory and presented W. A. Sutton, manager, and W. H. Wells, su-

perintendent, with a meerschaum pipe apiece. Then those two gentlemen invited the men to the Hotel Brunswick where there was more jollity in which about 100 participated.

Fred Ensworth, the old Lozier employee, who was for a time manager of the Ellwood (Pa.) tube plant, is now a

banker at Waterford, Pa., and is loaning money to the farmers of that section at a little less than 100 per cent. As a financier Ensworth was pretty well ahead of the bicycle business, and he was reckoned one of the shrewd and sure men of the Lozier staff. As Ensworth presides over the only bank in the village, he has a little monopoly.

STEAM TRUCK FOR STREET SERVICE

ONE OF the most interesting phases of the automobile industry is the development of heavy wagons and trucks, and in this connection figures speak louder than words. Comparative cost of operation of horse-drawn and steam or other motor trucks, and comparative efficiency in service, are matters concerning which the business man and the public works official is interested.

London is, perhaps, the first city in the world to employ an automobile regularly in its street service, and the experience of those in charge of its steam truck is valuable. The wagon in question has been doing double service as a collector of street sweepings (dust, as the Londoner terms it) and as a street sprinkler.

The report of the board of works for the Strand district of London for the year 1900 gives some very important figures for the working of its Thornycroft steam vehicle.

About a year back the Strand authorities decided to hire a steam vehicle upon the recommendations of a special committee appointed to inquire into the matter. Arrangements were made with the Thornycroft company for a trial of the motor on hire at a cost of \$36 per week, to include all costs of working, a commencement being made on February 5, 1900, and May 1, this motor vehicle was purchased and another one ordered. The details of the report are divided into three periods:

First Period—Motor on hire from February 5 to March 31, used in dust collection only.

Second Period—Motor working from May 1 to June 18, used in dust collection.

Third Period—Motor working from June 19 to August 4, used in dust collection between 6 a. m. and 11 a. m.; in street watering between 11 a. m. and 6 p. m., and in flooding the street (preparatory to the flushing by fire hose) between 11 p. m. and 5 a. m.

During the first period of about eight weeks, the vehicle being on hire and supplied by the company with coal, lubricating oil, and a driver, 152 loads were dealt with, comprising 252 tons out of a total weight of 2,039 tons of dust received from all vans employed, giving the motor van an average weight per week of 36 tons out of the total by all vans of 291 tons per week.

In the second period the dust collected by the motor van (after purchase) in the seven weeks, when it was used for dust collection only, 153 loads were removed, the weight being 363 tons out of a total weight of dust from all vans of 1,604 tons, giving a weekly average of 52 tons for the motor van, against 229 tons by all vans. During the seven weeks the motor van burned 9 tons of navigation coal.

In the third period of seven weeks, from June 19, the van was used in dust collection between 5 a. m. and 11 a. m. only, street watering being undertaken in addition to the dust collecting during

this period, the watering body being substituted for the dust body at 11 a. m., and street watering continued until 6 p. m. During this third period the motor van collected 87 loads of dust, of a total weight of 189 tons, out of a total by all vans of 1,451 tons, giving an average of 27 tons per week for the motor van, against 212 tons by all vans, the fuel consumed being 12 tons of coal.

In addition, the van was employed for street watering for 25 days, distributing in that period 225 loads of water, totaling to 157,500 gallons. In addition to the dust collecting and street watering, the motor van was also used at night from 11 p. m. to 5 a. m. in flooding the streets with water, preparatory to street flushing by fire-hose by the flushing staff. The van was so used for 37 nights, distributing 777 loads of water, totaling to 543,900 gallons.

Mr. Ventris, who prepared the report, then points out that better work resulted during the second period than was the case when the motor was on trial. This may be due partly to experience gained in handling and partly to the regular use of a small trailing-dust van on one run per day. At present it is found necessary to have an assistant with the watering tank body when traffic is heavy, to work the levers controlling the water delivery, but with the horse-driven vehicle these levers are worked by the foot, and the question of supplying similar foot levers to the watering body of the motor is worthy of consideration.

▲

Mr. Ventris further says:

"It is obvious that were a trailer in use of the same capacity of the motor van, the weights collected would be doubled, without extra expenditure."

"Passing now to a comparison with horse work, I have, in accordance with reports and estimates laid before the board, discontinued the work of three single dust vans, horses and drivers, and I find that the work is better and more speedily carried out. The house dust, which is collected for the most part between 6 a. m. and 10 a. m., is, as the

board is aware, very light, and the weight therefore does not convey a correct idea of the labor in collection. I may say that the yearly average for the Strand district, exclusive of street and market sweepings, is 1,265 tons per mile of street per annum, while the bulk is 4,216 cubic yards. This gives an average weight of only 600 pounds per cubic yard. In addition to the horses and vans above mentioned, I have discontinued the use of two water vans, horses and drivers, that were previously engaged in flooding the streets prior to the flushing by fire-hose at night."

■

The reduction of cost per annum may thus be stated:

Hire of 5 horses, with harness and fodder, at \$312 per horse.....	\$1,560
Hire of two water vans.....	153
Three drivers of dust vans.....	1,029
Two drivers of water vans.....	811
Oiling and repairing three dust vans	99
Insurance on five vans	35

Total reduction in cost per
annum \$3,687

The expenditure in respect of the motor has been:

First Period—Hire for eight weeks, at \$36 per week, for day work, inclusive of all charges.

Second and Third Periods—These aggregate a clear three months. The appended table is in proportion.

Estimated annual expenditure, based upon the experience of three months' working:

Interest and return of capital, spread over ten years.....	\$ 393
Fuel	720
Wages, two drivers	921
Attendant to work levers of water van	312
Repairs	360
Lubrication and waste	96
Boiler insurance on \$9,600.....	12
Insurance	48

Total cost per annum.....\$2,862

Thus the venture virtually results in a net saving of \$825 for each van.

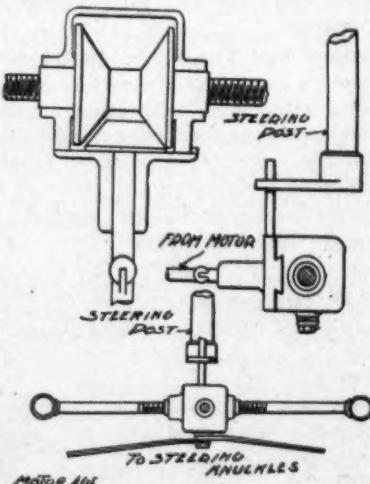
THE WEEKLY PATENT OFFICE BUDGET

PATENTS for this week present several inventions which are more interesting than valuable. The two most likely to appear in commercial form are Kalb's motor bicycle frame and Morgan's motor vehicle solid rubber tire.

POWER TRANSMITTING GEAR

Letters patent No. 668,218, dated February 19, 1901, to George L. Roby, of Dayton, O.

This is a simple device for moving the steering mechanism and wheels by the power of the motor. Its operation is quick and positive, but is open to the same criticism that applies to most such contrivances—the steering must be gauged by the duration of the holding of the gear in one position, instead of by



Roby's Power Steering Gear

the distance of stroke of the steering handle.

The travel of the steering handle in

either direction is slight, being only sufficient to throw the gear into operation in one or the other direction. When this has been accomplished the steering mechanism begins its movement and continues to turn the wheels on a constantly decreasing arc until the operator either switches the handle to its neutral position or to the other operating direction. Thus a new system of steering must be mastered in order to drive the vehicle safely.

This particular gear has one advantage, however, which is not possessed by several others for the same purpose which have been recently patented; it causes the steering wheels to remain at any position to which they have been set until the driver, by opposite manipulation of the handle, causes them to be swung back to central position. In the meantime the handle may be held in its central inoperative position ready for action in either direction according to the exigencies of the travel of the vehicle.

Near the front end of the running gear frame is a rigid cross brace in the form of a rod with its central portion screw threaded. Upon this is adapted to travel, in either direction, a casing fitted with a revolute hub at each end, each hub being substantially a nut to engage the screw threads of the rod. Each hub also carries a bevel friction gear and, mounted on a stub axle within the rear face of the casing, is another similar friction gear. The rear face piece of the casing is adapted to slide across the casing, being furnished with a dovetail slide to retain it. Thus by sliding this face piece from one side to the other, the friction gear carried by it may be made to engage either one of the gears on the

cross rod and consequently, by such engagement, the entire casing may be moved by the screw action of the gears in one or the other direction on the rod, according as to which of the screw gears is in engagement with the central driving gear.

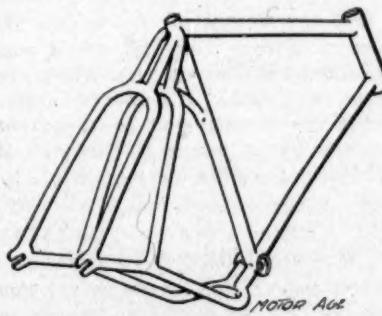
The driving gear shaft on its outer end is connected by a flexible or knuckle joint to a link whose rear end is similarly fastened to the front end of a longitudinal shaft driven by bevel gears from the motor shaft or counter shaft. The vertical pivot or post of the steering handle has a rearward crank on its lower end and this crank arm, by means of a slot, engages a vertical pin projecting from the top of the sliding rear face plate of the movable casing.

The operation of the steering handle in connection with this sliding face plate and its gear is obvious. The remaining factor is suitable connection between the traveling casing and the links which operate the wheel steering knuckles.

KALB'S MOTOR BICYCLE FRAME

Design patent No. 34,112, dated February 19, 1901, to Henry Kalb, of Rochester, N. Y.

It is the distinctive feature of the Regas motor bicycle, made by the Regas



Kalb's Motor Bicycle Frame

Vehicle Co., of Rochester, that the motor is removably held in an upright position in a special rear frame. The new Rochester design provides a similar disposition of the motor, though accomplishing it by a slightly different form of rear frame construction.

The rear fork tubes are bowed or curved downward back of the crank

hanger to provide a seat for the motor crank box and from the rear end of this bow portion of the forks there extend upward an auxiliary pair of rear stays to the seat cluster. Stays between the rear fork ends and the seat cluster are disposed in the usual fashion and between the auxiliary stays and the seat mast, at a suitable height to cover the top of the motor cylinder, is an upwardly bowed longitudinal brace tube. The front frame is of usual construction.

A DOUBLE HEADER

Letters patent No. 668,262, dated February 19, 1901, to David N. Melvin, of Linoleumville, N. Y.

Mr. Melvin seeks to provide economical power which may be utilized without waste and whose application includes storage of unused energy during easy driving, for emergencies, such as hill climbing, when a reserve upon which to draw is desirable. To this end he supplies a gasoline motor and an electric motor, both of which drive direct to the traction wheel shaft.

The electric motor, however, is shunt wound that it may act as a generator to charge its batteries without being reversed, and it is controlled by means which make it possible for the driver to increase or decrease its voltage at will, the manipulation of the controller to change it from series, series-parallel or parallel battery connections, being specified for this purpose. Thus, according to the inventor, if the driver so manipulates the electric motor controller at any time that its revolution, forced by the gasoline motor, is sufficient to generate a counter electromotive force greater than the voltage of the cells, the motor will commence to generate and charge the cells.

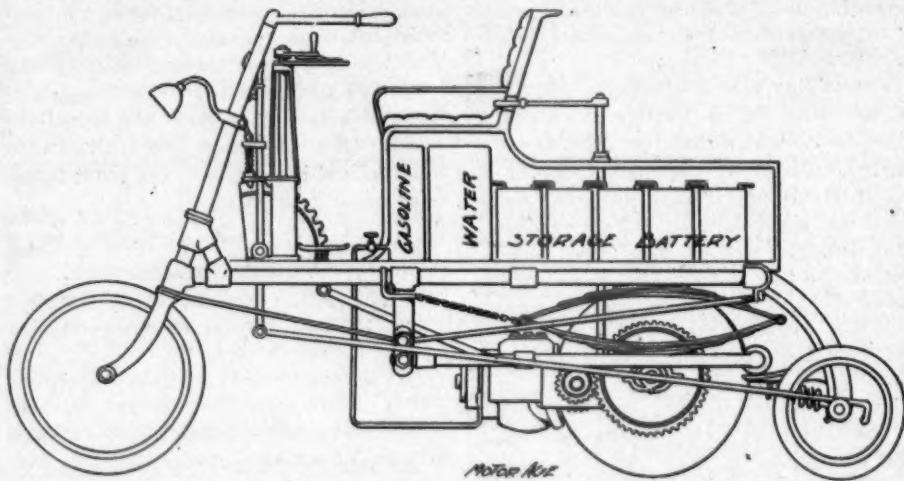
The charging action of the device is applicable when running down grade or upon level roads when a light driving force is sufficient. In other words, when running on a level, the gasoline motor operates to rotate the motor, now a generator, and with what little force is left over endeavors to also propel the vehicle.

Several items in the construction of

the vehicle are still more interesting than this double drive feature.

The vehicle is driven by a fifth traction wheel in the middle of the running gear

lever the driver draws the side rods forward, and with them the axle of the rear road wheels. This movement causes the cam extension arms from the road



MELVIN'S COMBINATION ELECTRIC AND HYDRO-CARBON VEHICLE

and carried by a hinged frame upon which the rear end of the body is spring mounted. The rear road wheels are carried by hinge arms swung from the rear end of the body and their position is controlled by longitudinal spiral springs, whose front ends are connected to adjustable-length chains or rods, fixed, in turn, to some rigid portion of the body or frame near the front of the vehicle. By the adjustment of the tension of these springs the proportion of load carried by the traction wheel is regulated.

Thus far the running gear is practicable for one of its kind. The next feature is novel and several other things that it would not do to mention. On each of the hinged arms which carry the rear road wheels, is a forwardly projecting curved cam lever or arm whose extremity is close to the under portion of a roller on the rear cross tube of the traction wheel frame. On each side of the vehicle is a long, longitudinal rod extending from the cross arm of a vertical lever on the front of the carriage to the rear axle of the rear road wheels, over which axle they are hooked.

The lever at the front is provided with a quadrant and latch that it may be retained in any position of its movement. By pulling back on the handle end of this

wheel swinging brackets to engage the under side of the adjacent rollers and lift the traction wheel frame and motors bodily off the ground—so says the inventor. Despite the inventor, however, it seems obvious that the real action of the device would be to lift the whole rear end of the vehicle higher into the air. In such case, it would take a strong lever and a strong man to lift himself, and half the weight of the vehicle and its heavy storage batteries far enough upward to raise the traction wheel free from mother earth. But then, considering that the arrangement has been patented, the public might just as well let the inventor have his way about it.

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M. & W. ENDLESS AUTO TIRE

Letters patent No. 668,384, dated February 19, 1901, to Fred W. Morgan, of Morgan & Wright, Chicago.

The purpose of this invention is to provide an endless solid rubber tire especially adapted to automobiles and which can be securely, but removably, fastened to the wheel rim or felly. The tire, instead of being entirely composed of rubber or rubber composition, has a rubber tread portion and a base portion composed of layers of fabric vulcanized

together and, as a whole, to the tread portion.

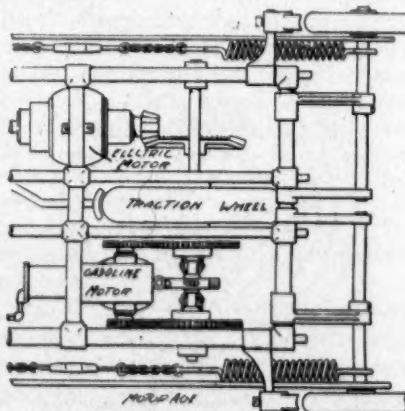
Extending annularly through the side portions of the tire and through also the central portion of the tread are non-stretchable metal bands or wires. The base portion of the tire is narrower than the tread portion, with outwardly tapering sides so that in cross section the tire presents an undercut edge form. These undercut edges engage correspondingly shaped annular flanges on the inner faces of side plates of the rim, and by means of which a retaining channel is provided for the tire. One of the plates has a flange which lies entirely across the outer face of the felly and thus furnishes a seat for the base of the tire. Cross tap bolts secure the flanges together and retain them upon the rim, locking, in turn, the tire in the channel formed by the side plates.

Letters patent No. 668,385, dated February 19, 1901, to Fred W. Morgan, of Chicago.

This is a modification of the tire described above.

THE PRESS AND PRICES

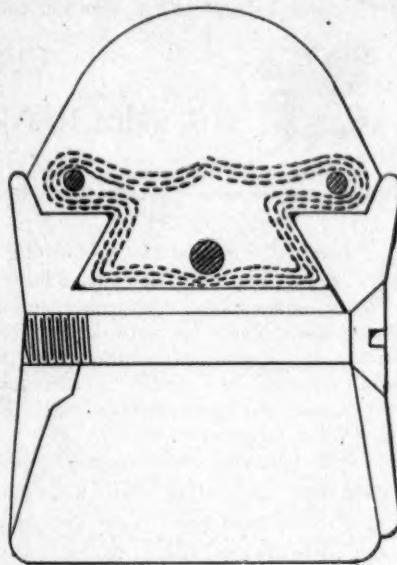
The Philadelphia Item, one of the members of whose staff was the manager of the late show in that city, takes a common-sense view of the price question. It has become so common for the



Melvin's Double Header

daily press to talk in the opposite strain that it is a relief to find at least one paper that takes the correct view. "A great deal of talk is heard," says the

Item, "about the probable reduction in price of automobiles during the coming season. People are heard to make such



Morgan's Endless Tire

remarks as 'Oh, they will soon come down in price, just like the bicycle.' They may come down in price, but it does seem that the reduction will not be nearly so rapid or as great as in the case of the bicycle. The final automobile has not yet been produced; manufacturers are finding out month after month, that marked changes are necessary in order to bring the horseless vehicle to its greatest perfection. Many manufacturers have decided to increase the price of their vehicle rather than to bring down the price, and there is every indication, that while the reduction will eventually come, it will come slowly."

If the Seldon patent is sustained and the use of non-disconnecting transmitting gears accomplishing the purpose of a clutch is made prohibitive to those who endeavor to evade the master patent, the evolution of the throttled gas engine, with which the speed may be regulated without speed changing and disconnecting drive, would be hastened. In this case the Seldon patent would prove an inspiration for accelerated energy on the part of gas engine experts.

CURRENT MECHANICAL TOPICS

ALMOST every means of mechanical transmission has been adapted in some form to the purposes of variable speed drive for automobiles, the necessity for a practical, simple and efficient mechanism being widespread. These speed changing gears may be classed into two types.

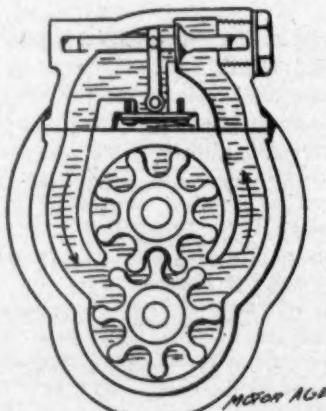
One type furnishes truly variable speed between the maximum and minimum limits, it being possible to vary the speed in any degree desirable, or, in other words, to gradually shift it from high to low or to any intermediate point.

The second type represents step gears of many patterns, in which the speed may be changed from one to another of two, three, four, or even more, definite speeds. The range of the latter type is generally sufficient; that is, the difference between the maximum and the minimum speeds is great enough. Also, the several intermediate speeds generally encompass the needs of ordinary vehicle driving.

Advocates of the first type, however, claim that the preservation and application of power is not, in the step type of variable speed gear, of sufficient efficiency and that perfect control of a vehicle demands a gear of absolute, gradual and non-intermittent speed change between limits. The strength of this element in the trade is evidenced by the numerous devices of the first type which are being constantly evolved. That the perfection of such a device is no easy task is shown by the scarcity of instances of application to commercial vehicles, these gears being by far in the minority in actual use. The future holds in a sealed package the story of their eventual development and application.

In most of the non-intermittent speed gears which have been brought out, friction devices of some form have been the most common means of power transmission. Peculiar mechanical movements, such as that employed in the Dietrich gear, are noticeable in a few instances. In the accompanying illustration is shown a gear of a kind which employs neither frictional surfaces nor special mechanical movements, being dependent for its action upon a hydraulic mechanism. It is novel and interesting, although its practicability is still a matter for demonstration. It is called the Letang hydraulic gear and comes from France.

Its principle of operation is simple, although the exact means for coupling it into the driving mechanism are not described in the French literature which brings public notice to the gear.



Letang Hydraulic Gear

On the end of the motor shaft is a pinion with specially formed teeth, which meshes with another similar pin-

ion loosely mounted within an iron casing revolubly supported by the motor shaft. It is probable that the vehicle is driven through gearing of some sort sustained concentrically by this casing.

The casing has two compartments which are filled with oil and which communicate with each other through a valve controlled by the driver's lever, and whose partition line is coincident with the line between the axes of the two pinions.

When the motor is started and the valve is open the pinions act as a pump and force the oil from one compartment of the casing to the other, in perfect circulation. If the valve is closed, the oil is immediately put under compression in one compartment and its resistance against the loose pinion causes the casing to turn backward relatively to the motor shaft. The extent of this backward movement of the casing—or, more properly, overrunning of the motor shaft—is regulatable by varying the opening of the valve, which graduates the compression of the oil in the secondary compartment. It is thus possible to gradually vary the speed to any point less than the normal speed of the motor shaft.

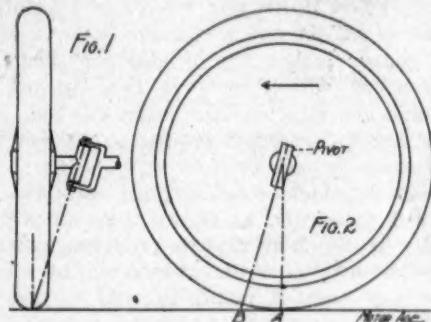
MORE ABOUT STEERING PIVOTS

Editor Motor Age:—Without attempting to argue with Mr. Duryea about the desirability of long steering heads, or pivots, for the steering wheels of motor vehicles, the writer wishes to call attention to the fact that there is another item in the construction of steering knuckles which has considerable to do with the ease and security of steering, although it has been paid but little if any attention on the part of automobile manufacturers.

As Mr. Duryea cites the bicycles as an example in drawing conclusions on the matter of long steering pivots, so also may the bicycle be cited in the instance at hand.

That the steering wheel may travel steadily and tend to return to its normal straight path after having been "whipped" sidewise by slight irregularities of the roadway, it has been learned

that the axis of the steering head or pivot must, if projected in a straight line, strike the ground ahead of the point of contact of tire and ground. It is to accomplish this that the steering heads



Diagrams Showing Steering Pivot Rake

and forks of bicycles are inclined an amount approximating in general practice 20 degrees from perpendicular.

Now in the building of automobiles it has been shown that it is best to tilt or set at an angle with perpendicular the steering head or pivot, so that the produced axis line will strike the ground coincident with the lateral point of contact of tire and ground. This principle is diagrammatically shown in Fig. 1 here-with, and has been adopted on some vehicles.

The reason for this oblique disposition of the steering pivot is twofold, however, and is not fully met in practice. It is not sufficient that the steering axis should strike the center line of travel of the wheel tire. In a bicycle this feature is accomplished because the steering head is in a vertical plane central of the machine and wheel.

It is also necessary, in the motor vehicle, in order to secure the best steering results to incline the steering pivot forwardly exactly in the same manner and for the same purpose that the steering head of a bicycle is so inclined to bring the produced axis ahead of the tire-ground contact point. In vehicles now made the axis produced coincides with the contact point. Thus, while the steering wheel tends to remain in its normal position, unless moved by the steering gear, to a greater extent than when the steering pivot is vertical, it has

the same tendency, also, to whip from side to side that would have the steering wheel of a bicycle whose steering head axis coincided with the tire-ground contact point.

A bicycle which may readily be ridden "hands-off" is one in which, by reason of proper inclination of steering head, the front wheel tends to keep to its course and thus obviate control of handle bar to overcome strains and forces transmitted back to it by the wheel. If a motor vehicle steering pivot were inclined forwardly, as shown diagrammatically in Fig. 2, so that its produced axis line would strike the ground ahead of the tire contact point, as well as inclined outwardly to make the axis coincident with the center line of travel of the tire, this same "hands-off" steering effect would result, and many of the small vibrations and strains now transmitted backward to the steering handle would be obviated.

On the other hand, the extent of this inclination is more limited than in a bicycle. If the distance between A and B, Fig. 2, is too great there will be such an under swing of the wheels in turning that side slip would more easily occur and the act of turning corners by manipulating the steering lever would be more laborious. The only rule that can be laid down on the matter is that the point B should be just far enough in front of A to clear the extent of flattened contact between the tire and ground. Thus in a solid rubber tire, the distance would not be as great as with a large pneumatic, for the reason that under the weight of the vehicle the latter would flatten to a greater extent and thus cause a larger contact surface.

The distance from A to B, then, must be such that the actual point B is ahead of the actual contact surface of the tire, the theoretical contact point A being taken as representing a more or less expansive surface according to the kind and size of the tire.

The writer would be pleased to see others take up the discussion of this point through the columns of the Motor Age. Respectfully,

L. G. A.

TO GATHER MORE POWER

Many a genius, no doubt, has attempted to devise a method of utilizing the power generated by the action of ocean waves. Some months ago a writer who had interested himself in the subject estimated that the power so generated, if it could be utilized, would do all the work required by the earth's inhabitants and a bit over. Out in California, a section of the country whence come many items of interest in the motor line lately, a company has been organized to exploit an invention designed to use wave power. It is called the Wave Motor Co., and its officers say they will erect a factory at Ocean Park. They claim to have secured the right to make a motor which has proven its ability to convert the energy of waves and apply it to man's use.

SIXTY MILES OF BOULEVARD

Unless the story turns out to be a mere product of yellow journalism the supervisors of Westchester county, N. Y., are about to earn the everlasting thanks of automobilists and other lovers of good roads. They have laid out, according to the New York Journal, plans for three of the finest boulevards in the state. They will be about sixty miles long in the aggregate. Each will have a strip of macadam sixteen feet wide and they will cost \$300,000. It is believed that they will be opened next summer.

One of the new boulevards will follow the Saw Mill River Valley. Another will go the length of the Bronx River Valley until it reaches the Putnam County line, a distance of thirty miles. The third will furnish a cross-country route from the Connecticut line westerly through North Salem, Salem Centre, Purdy's Station, Somers, Somers Centre, West Somers, Yorktown and Cortland to the village of Peekskill, a distance of twenty miles.

The two main boulevards will be best adapted to automobilists and coaching parties. Supervisor Kear says that the Saw Mill River route will be most attractive to any one with a horse or a

vehicle. It will pass through a historical section and one that from the Yonkers line to the Putnam County terminus is naturally picturesque.

The Saw Mill River boulevard will be part of a direct route to Albany. It is planned to extend it from Baldwin's Place, which will be its Westchester end through Putnam and Dutchess counties to Hudson and Albany.

It will pass many revolutionary landmarks. The automobilist will be reminded of the works of Washington Irving and of J. Fenimore Cooper as he whizzes through the country in which they gathered so much material.

The road goes by the old Ledger house at Elmsford, where Irving and Cooper often met and chatted over their mugs of ale. This hostelry, before the war, was owned by Captain Abraham Storms, whose ardent patriotism incited the tories to rage.

After leaving this hamlet the boulevard will wind slightly to the west, through East View, Briar Cliff Manor, Millwood, Kitchawan and Pinesbridge. Then it will encircle Croton Lake and proceed to the north through Yorktown Heights, around the big Amawalk reservoir, which is one of the largest artificial lakes in the world, to the Putnam county line.

The thirty mile boulevard on the eastern side of the county will follow the Bronx Valley from Mamaroneck and will then continue northward through White Plains, North Castle, New Castle, Lewisboro, North Salem to Peach Lake.

When the boulevards are built the Westchester Automobile Club will erect sign posts and establish supply stations along the entire route.

With the Boston Post Road, the Albany Post Road and the new boulevards Westchester will have the best roads in the state it is said.

It is announced that the Chicago Electric Vehicle Co., of Faribault, Minn., will manufacture every part of its vehicles, including the batteries, in its own factory and that the building will be enlarged for the purpose.

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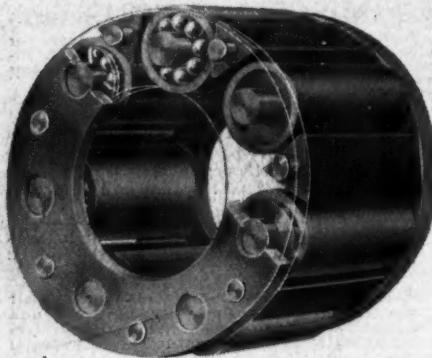
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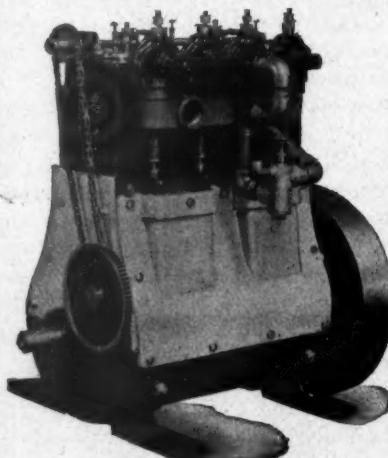
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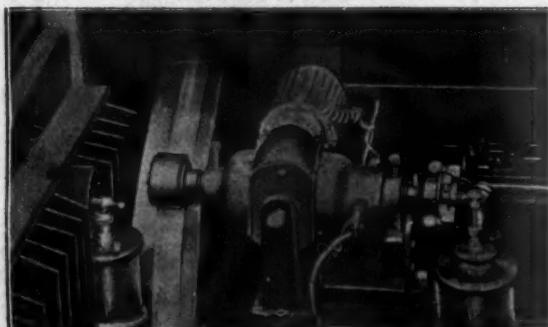
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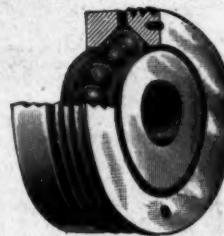


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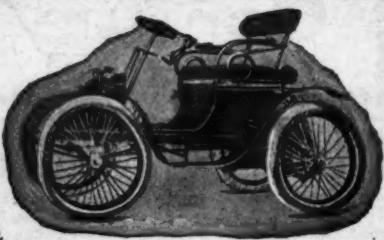
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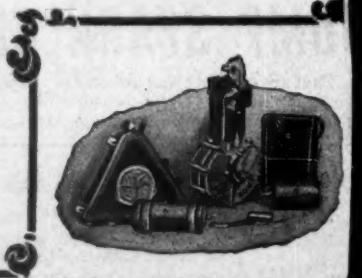
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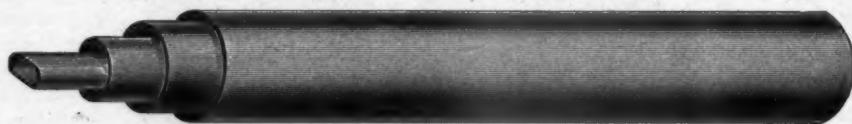
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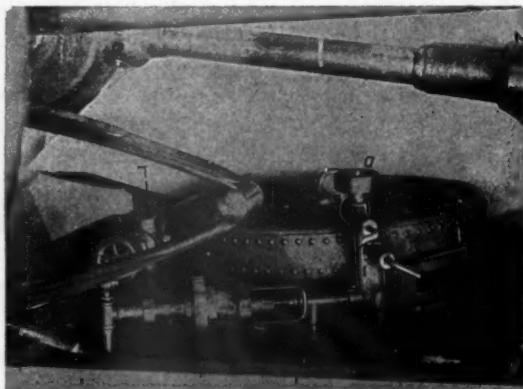
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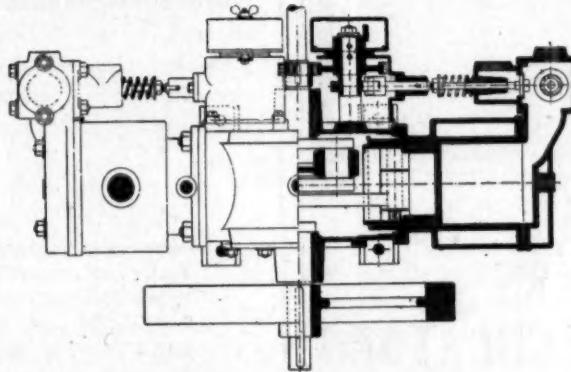
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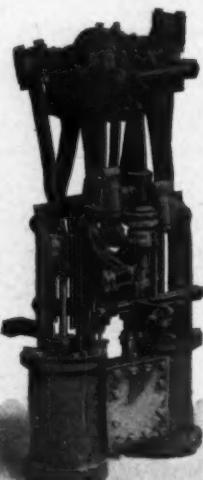
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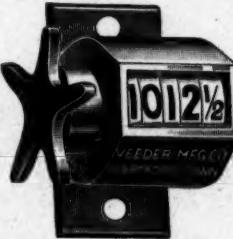
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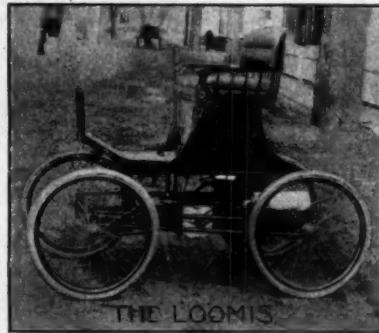
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